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The effect of financial literacy on financial policies

Evidence from a randomised control experiment in Mozambique



- In brief:**
- Previous research indicates that corporate policies are an important determinant for firm performance. It has also been shown that these policies are related to the education of firms' managers.
 - This brief evaluates the impact of financial education of managers on firm policies and performance.
 - The authors find that managers adjust financial policies after having attended a programme on "Corporate Finance and Risk Management".
 - The results suggest that relatively small interventions, such as financial education, improve financial practices and decision-making and may ultimately affect economic development.
 - The authors suggest policymakers establish or support financial literacy programmes for executives.

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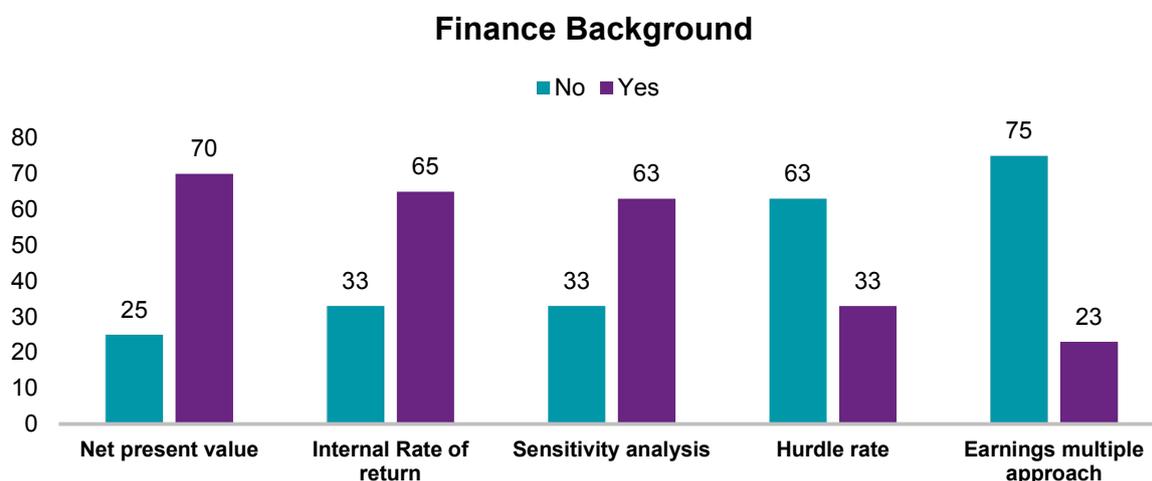
Research overview

Human capital, defined as the set of skills, talent and knowledge of people, is an increasingly important economic resource. One of its multiple dimensions is managerial human capital. An economy with higher levels of managerial human capital can easily rely on the business sector to achieve economic progress. Recent studies suggest management quality is indeed associated with firm level productivity and profitability (Bloom and Van Reenen, 2012).

One important dimension of managerial human capital is financial expertise. Financial literacy has been shown to impact revenues and survival rates of small and micro-entrepreneurs in the context of developing countries (Drexler, Fischer, and Schoar, 2014 and Anderson-Macdonald, 2014). However, very little is known about the role of financial literacy in large firms' managerial practices and its impact on firm financial policies. Although this gap in the literature is present for both developed and developing countries, it may well play a crucial role in less developed environments.

Figure 1 shows some financial practices related to capital budgeting and valuation by firms that are led by a financial expert CEO vs. a "regular" CEO. We find significant differences between these two groups. While a large majority of CEOs with a background in finance is making use of sophisticated valuation techniques such as NPV (70%) or conducts sensitivity analysis (63%), this is relatively uncommon for CEOs without such a background. Only 25% of CEOs with no financial background use NPV and only 33% of them perform a sensitivity analysis in their capital budgeting calculations. At the same time they are more likely to use less sophisticated valuation techniques such as hurdle rates (63%) or multiples valuation (75%). This evidence is consistent with the existing literature documenting relations between managers' literacy and financial or accounting data outcomes such as firm value.

Figure 1: Financial literacy and financial policies of managers of large companies in Mozambique



In our research, we conduct a randomised controlled experiment in Mozambique, where we teach financial management to executives of large firms in order to evaluate the impact of financial literacy on large companies. This setup allows us to assess in a causal way the relation between financial literacy and corporate practices and performance. Despite this previous evidence on the link between literacy and firm performance, the direction of causality has been difficult to establish.

We offered managers of large companies operating in Mozambique the opportunity to participate in an 18-hour Executive-level Programme in Finance in Maputo. This training - "Finance and Strategy -

Value Creation in Emerging Markets” – promoted under Imperial College Executive Education branding was specifically designed to accommodate the reality of a developing economy, such as Mozambique. The topics covered were capital budgeting (project valuation), capital structure, working capital management and risk management. Upon enrolment, we randomly allocated the participants to one of two cohorts. The first cohort was taught in May 2017 and represented the treatment group. Participants in the second course (in November 2018) served as the control group.

During the fifteen-months period both groups were contacted in order to collect financial data and conduct follow-up survey on financial practices. We then measured the effects of the treatment by comparing the firm level outcomes of the treatment group with the same outcomes for the control group, using a differences-in-differences (DID) estimator.

Table 1 shows that treated firms reported high intentions to change financial policies after the participation in the programme: 92% of the firms intended to adjust their working capital management; 85% intended to change their risk management; 64% intended to change valuation techniques; and 64% intended to change their capital structure. The survey also reveals that a sizeable fraction of firms is not able to independently adjust their capital structure (25%) or risk management practices (20%) because they are subsidiaries of other companies and these policies are set somewhere else in the business group.

Table 1: Intentions to change firm financial policies

	Yes	No	N/A	Miss.	#	% Yes	% Yes (incl. missings, excl. N/A)
Working capital	22	2	1	2	27	92%	85%
Risk management	18	3	4	2	27	86%	78%
Valuation	14	8	2	3	27	64%	56%
Capital structure	9	5	9	4	27	64%	50%

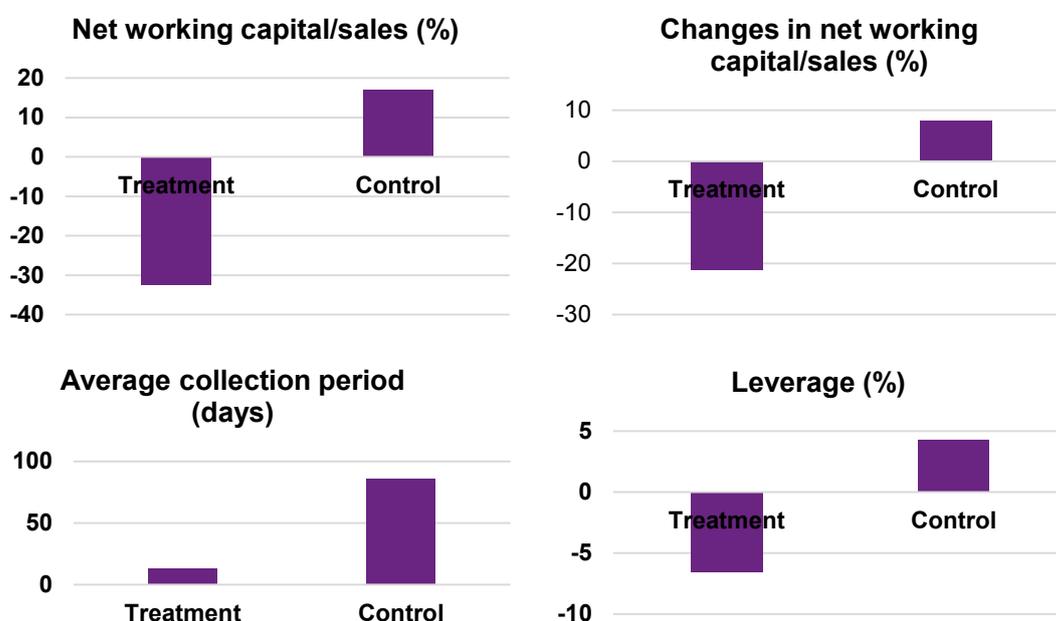
A significant fraction of the executives taking the course also reported to effectively changing some of their financial practices (Figure 2): 36.4% of treated firms report that they have implemented changes in working capital management 15 months after the treatment. Corresponding figures for other financial policies are lower (13.5% respectively). Moreover, firms reported that they implemented these changes because of the course they participated in 15 months ago. While these results are suggestive of a treatment effect, we can also make use of the control group to address the concern that we may capture for instance a pure time-effect. Indeed, it might be the case that changes in the economy may have lead companies change their financial policies, irrespective of the treatment. When we compare differences between the means of treatment and control groups (using a one-sided t-test), we find a large and significant difference for changes in working capital management (significant at the 1%-level) and changes in capital structure (significant at the 10%-level). We did not find statistically significant differences for changes in risk management or valuation techniques.

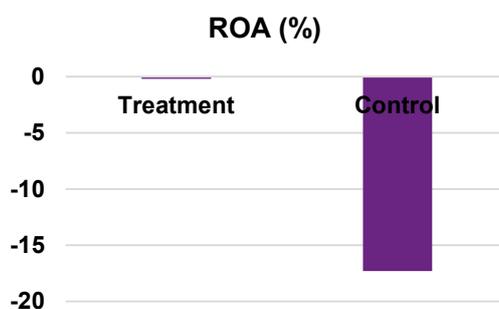
Figure 2: Implemented changes in financial policies



Finally, we make use of accounting data to validate the survey evidence and to analyse potential implications for firms’ efficiency. Figure 3 shows a significant and large treatment effect in net working capital levels, changes in net working capital and average collection period. We also find some evidence that managers change their capital structure after the treatment. The effects on working capital management are large and significant: net working capital decreases by 0.86 standard deviations for the treated firms when compared to the control group. The effects on overall firm performance are economically relevant: ROA increases up to 18 percentage points for treated group when compared to the control firms.

Figure 3: Impact of Implemented Changes in Financial Outcomes





Policy recommendations

Overall, our randomised control trial shows that financial expertise of managers has a large impact on firm performance. We show that this relationship acts through the adoption of financial practices that promote value creation. Such evidence suggests that managerial human capital, namely financial expertise, can contribute to improve financial practices of companies as well as decision-making, and it may ultimately affect economic development.

In regards to policy implications, our results support the need for educational interventions and financial literacy programmes, as well as incentives to improve financial management practices in corporations.